



Wood Duck parade, CBG

Photo: Noel Young

How Light Pollution Impacts Wildlife

At our June monthly meeting, we were privileged to have Kelly Clitheroe as guest speaker. Kelly has practiced Astronomy for more than 10 years and is President of DarkSky Victoria. The mission of DarkSky Victoria is to preserve and protect the nighttime environment and our heritage of dark skies through environmentally responsible outdoor lighting.

Kelly began her presentation describing her first experience of a dark sky. She was camping at Uluru and felt the dark sky as a blanket on top of her promoting awe, curiosity and understanding. When she returned to the city, the artificial light pollution was and still is overwhelming.

Kelly explained that there are five types of light pollution:

- Sky glow – caused by the combination of reflected light and unshielded light over urban areas. Sky glow is affected by cloud cover and other particles in the air. Blue

light scatters more in the atmosphere compared with yellow-orange light.

- Light trespass – caused by light from an outside source, invading your property.
- Glare – caused by unshielded light. It can cause loss of contrast, temporary blindness, lead to unsafe driving conditions.
- Reflected light – from nearby reflective or white surfaces. The light is spread in different directions around the lighting installation.
- Clutter – bright, confusing and excessive groupings of light sources.

While Kelly described research that had shown human health concerns from light pollution, we were particularly interested in her accounts of negative impacts on wildlife.

Light at night can both attract and repel. At its core, artificial light at night (such as from street lights) masks natural light cycles. Its presence blurs

the transition from day to night and can dampen the natural cycle of the Moon. While most pollution is challenging to control, artificial light pollution can be addressed.

For some species, light at night does provide some benefits. Species that are typically only active during the day can extend their foraging time. However, while these species may gain on the surface, this doesn't mean there are no hidden costs.

Artificial light can adversely affect many species and ecological communities. Humans and animals perceive light differently. Sensitivity to high energy, short wavelength UV/blue light is common in wildlife especially nocturnal species. Similar to human eyes, high intensities of blue light may have the potential to damage the eyes of wildlife. New data suggest that blue light may also affect the regulation of melatonin and synchronising circadian rhythms to the 24-hour light/dark cycle in animals.

The Castlemaine Field Naturalists Club acknowledges the Dja Dja Wurrung community as the Traditional Owners and Custodians of the Country where we meet and study the natural environment. We pay our respects to their Elders, past, present and future.

Light emitting diodes (LEDs) are rapidly becoming the most common light type globally as they are more energy efficient and cheaper than previous lighting technology. With few exceptions, all LED lights contain blue light. However LED technology has the potential for specific management of blue light, and can be instantly turned on and off.

70% of mammals and 60% plus of invertebrates are nocturnal, active at night or around dusk and dawn. But light pollution can affect these animals by increasing collisions with cars (Tawny Frogmouths, Kangaroos, Wombats) and buildings (bird strike). The increase in light pollution makes these animals more vulnerable to predation and this can have a flow-on effect into the food chain.

The Mountain Pygmy Possum, for example, feeds primarily on the Bogong Moth, a long distance nocturnal migrator that is attracted to light. Recent declines in moth populations, partly due to artificial light, have reduced the food supply for the possum. Disorientated moths waste a lot of energy and most likely will die. Canberra is trialling a program to reduce light pollution not only during the moth migration period but for extra periods during the year.

In 2014, a group of scientists in the UK, theorised that streetlights were affecting the behaviour of moths. Of the hundreds of moths they observed, over 70% were drawn upwards towards the lights and away from the flowering plants, resulting in a noticeable reduction in plant pollination as well as the number of pollen types that were transported by the moths. This proved true across several different nocturnal moth species and over 28 varieties of plants.

Light pollution can disorient flying birds, particularly during migration, and

cause them to divert from efficient migratory routes, the endangered Swift Parrot for example.

“Dark Sky So Shearwaters Fly”: Phillip Island is developing an annual community campaign where between mid-April to mid-May, residents and businesses are encouraged to minimise all light pollution by turning off or dimming lights. This is when Shearwater chicks embark on their 14,000km first flight to Alaska. The chicks are drawn to street lighting and land on the roads where many of them are killed by cars. Lights on the San Remo bridge are turned off for up to 10 nights during the peak departure period to minimise the number of birds flocking to the bridge, causing a hazard to themselves and to drivers.

It has been noted that light pollution can extend the daylight behaviour of Corellas and disrupt the sleep patterns of some birds e.g. Magpies.

Adult marine turtles may avoid nesting on beaches that are brightly lit. On beaches exposed to light, females will nest in higher numbers in areas that are shadowed. Hatchling turtles rely on starlight/moonlight on water as one cue to direct them to the sea. Artificial lighting such as street lights and tall light poles on piers can adversely affect their ability to reach the sea often leading to the death of the hatchlings.

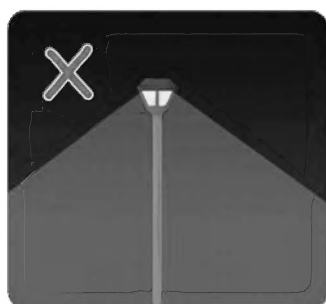
Having described the detrimental effects of light pollution Kelly went on to describe actions which we all can implement to counter these effects. First, it is very simple to protect dark skies: don't shine light upwards and don't have more lights than required on. In practice, protecting dark skies involves a combination of lighting engineering technology, working with local authorities and property owners and legislation.

- Start with natural darkness. Artificial light should only be added for specific and defined purposes, and only in the required location and for the specified duration of human use.
- Use adaptive light controls to manage light timing (dimmers, motion sensors for security lights and timers), intensity and colour.
- Light only the object or area intended – keep lights as close to the ground as possible, directed and shielded to avoid light spill.
- Use the lowest intensity lighting appropriate for the task.
- Use non-reflective, dark coloured surfaces near lighting fixtures.
- Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.

Community groups can petition their neighbours, local councils and local Member of Parliament to implement these principles. The approach should be realistic and specific outlining to the authority where the issues are and how to work together to devise a policy. E.g. "I would like Council to assess the light pollution produced by their waste-management facility at Smith Road, as the lights glare onto the road and are a danger to drivers. Here is a photograph of the area and the light which is the problem".

Individuals can have their car headlights adjusted to warm colour globes.

In question time, Kelly raised the issue of Noctourism. Is it good or bad? Touring out in to the outback to experience complete and absolute dark skies can be a wonderful experience. To visit the big cities for a midnight laser light display is a different interpretation of Noctourism.



Street lighting



Further information can be accessed at these online sites:-

<https://www.bbc.com/future/article/20230308-how-light-pollution-disrupts-plants-senses>

<https://www.agriculture.gov.au/sites/default/files/documents/national-light-pollution-guidelines-wildlife.pdf>

<https://www.indefenseofplants.com/blog/2018/8/6/light-pollution-and-plants>

<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2745.12551>

https://www.researchgate.net/publication/24211376_Danish_night_shift_workers_with_breast_cancer_awarded_compensation

Jill Williams

Forest Creek Excursion Report

On Saturday 14 June twenty-one mostly well rugged-up folk met in Greenhill Place to learn about the Forest Creek Revitalisation Project currently underway and to walk the two blocks of Forest Creek from the Ten Foot Bridge (the white footbridge behind the Octopus) to the highway and back.

We started the day with an explanation of the Forest Creek Project from Jon Leever from the Castlemaine Landcare Group, who also provided this summary:

During the gold rush Forest Creek was known as the most famous creek in the world. The Forest Creek Revitalisation Project will re-naturalise a channelised section of the creek in central Castlemaine, straightened during the gold rush. It will create habitat and wildlife linkages with upstream and downstream areas of

Forest, Campbells and Barkers creeks.

Key delivery activities include instream works to re-create meanders, riffles and pools, installation of litter traps, revegetation with threatened and riparian indigenous plants, public green spaces and community engagement.

Project outcomes are: creation of an aquatic habitat corridor with a diversity of flora and fauna, improved water quality and litter control, recreation of a living stream, and greater community knowledge and understanding of, and access to, this significant urban stream.

Jon told us that 1,500 tons of dirt and accompanying dense growth of *Phragmites australis* (Common Reed) have already been removed from more than a block's length of the

creek, and we could see the dramatic difference this has made. In addition to clearing the creek bed and creating pools and other more natural forms for the creek's path, over 10,000 native plants, many of them grasses, have been planted, with many more to be added as more of the creek bed is cleared.

It was extremely interesting to observe the progress of the project as we walked downstream. Also extremely interested in the revitalisation work was a lovely White-faced Heron, which calmly walked upstream, taking advantage of the already improved creek and looking for delicacies while we all watched on and photographed it.

The companion activity of the excursion was to note the wide variety of Australian trees and shrubs that are growing along those two blocks of the

creek. Sue Luke, who led that part of the excursion, and I had created notes identifying most of the plants, and these will form the basis of a new brochure encouraging locals and visitors to do the walk. We had identified 30 species, and this number will be added to because several additional Acacias were identified during the excursion, and some trees on the northern side of the creek, which had not been included, will be added. Fourteen of the species occur naturally in this region. These include: the *Eucalypt* species *leucoxyton* (Yellow Gum), *camaldulensis* (River Red Gum) and *polyanthemos* (Red Box); *Acacia* species *mearnsii* (Black Wattle), *dealbata* (Silver Wattle),

melanoxyton (Australian Blackwood) and *provincialis* (Wirilda); and one small sample of *Gaudium myrsinoides* (Heath Tea-tree).

One of the highlights was a *Eucalyptus platypus*, which is a west Australian mallee-like eucalypt. The name comes from the flower buds, which are arranged on a broad, flattened, unbranched peduncle (the stalk that bears the flower or fruit) that looks quite a lot like a platypus's tail. Other notable trees were the avenue of *Brachychiton populneus* (Kurrajongs) along the bank of the creek, some beautiful *Eucalyptus sideroxytons* that are just coming into flower, a spindly but interesting

Eucalyptus leucoxyton subspecies *megalocarpa* and a fine, possibly original example of our local *leucoxyton* subspecies *pruinosa* in a private garden. There are many *acacia* species along the creek, some of which we failed to definitively identify, but apart from some good examples of *Acacia mearnsii* and *dealbata*, we also saw several examples of *Acacia podalyriifolia* (Mount Morgan Wattle).

It proved to be too cold to linger at the end of the walk for afternoon tea, which is also what happened last year when we did the Kennedy Street/Goldsmith Crescent walk, but that's winter in Castlemaine!

Cathrine Harboe-Ree

Photos by Cathrine Harboe-Ree unless otherwise stated



E. camaldulensis



E. sideroxyton



E. platypus peduncle



Jon Leever addresses the group

Photo: Lou Citroën



A newly created pool in Forest Creek



Bird List for the excursion by Euan Moore

- Rock Pigeon
- White-faced Heron
- Galah
- Long-billed Corella
- Crimson Rosella
- Red Wattlebird
- Australian Magpie
- Pied Currawong
- Little Raven
- Silveryeye
- Red-browed Firetail

Left: White-faced Heron

Right: Possibly a *Gymnopilus junonius*, Spectacular Rustgill

Photos by Lou Citroën



New walk brochure:

Castlemaine Street Trees

Castlemaine streets feature a significant number of Australian trees, some of which are historically important. A new brochure in the Explore section of the website details a 2.75 km walk highlighting a number of these trees:

<https://castlemainefieldnaturalists.org.au/wp-content/uploads/2025/06/CFNC-Street-Trees-Brochure.pdf>

The loop walk, which starts and finishes at the Visitor Information Centre, takes in part of Campbell St, the southern end of Kennedy St, Goldsmith and Camp Cres, part of Yandell St and a section of the walk along the Creek. The two historically significant trees are the Prisoner Tree in Goldsmith Cres and Howe's Survey Tree in Yandell St, but the prize for the tallest tree probably goes to the magnificent *Eucalyptus melliodora* (Yellow Box) in Goldsmith Cres. Check them out for yourself!



Above: *Eucalyptus saligna* (Sydney Blue Gum) and *Eucalyptus leucoxylon* (Yellow Gum), Kennedy St.

Left: *E. melliodora* Goldsmith Cres.

Photos: Cathrine Harboe-Ree

Observations



Grey-headed Flying Foxes, CBG
Photo: Noel Young

Geraldine Harris

"Old Man Weed" or Common Sneezeweed (*Centipedia cunninghamii*)

I found this plant growing in one of our dried-up dams. "Old Man Weed" is a small perennial herb with aromatic, rather sticky leaves and green button-like flower-heads and it has a powerful reputation among Aboriginal people as a curative plant.



"To prepare the tonic, used for colds and chest complaints, big bunches of the plant are gathered and boiled down. The resulting black decoction can then be bottled and kept for some time. Going on a course of "Old Man Weed" requires some care. To start with one takes only one or two teaspoons full, gradually progressing to something like half a cup a day. It can also be rubbed on the skin for complaints." (Koori Plants Koorie People, 1992, Nelly Zola and Beth Gott)



Left: Here is a photo of my **Beautiful Badge Huntsman** (*Neosparassus calligaster*), I think, that lives a quiet unassuming life in the tube of my rain gauge. He has been there for months and whenever we have rain he obligingly moves aside and hangs on while I empty the gauge or replace the lid.

Rosemary and Peter Turner

On the morning of 30th May, while walking in the Botanical Gardens we heard Yellow-tailed Black Cockatoos, then about 50 flew over in two groups. Some settled in a tall pine. Others were calling from the pines in the Flora reserve.



Jill Williams

Rescued from the firewood pile. While looking for hibernating European Wasps in the pile, I came across this fine specimen which I hadn't seen before. Shining Cockroach (*Genus Drymaplaneta*).



Lou Citroën



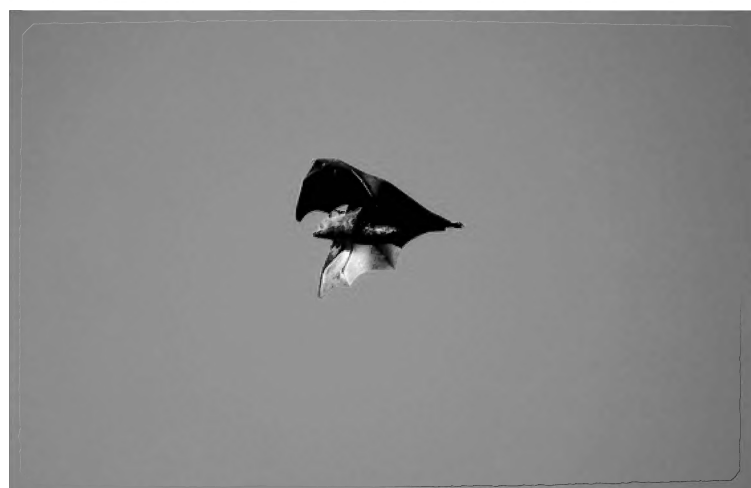
I took this photo on June 8 of what I suspect is a House Sparrow with albinism in our backyard. At first I saw it fleetingly and thought it was a Robin communing with the Sparrows. But, armed with camera I waited and patience paid off.

The shot at left shows it taking off in a bit of a blur, but it does clearly show the white wing colouring.



My next pick would have to be the Whistling Kites over Cairn Curren Res. a couple of weeks ago. There were two pairs and these two obviously having some fun circling, playing and calling, totally ignoring a few honey-eaters which were doing their best to chase them away.

Also at Cairn Curren Res. there were over 20 Swans with what I first thought were cygnets. On more careful observation I noticed that they were Grey Teal happily communing with the Swans.



Grey-headed Flying Foxes have established a winter roosting colony in the Castlemaine Botanic Gardens for the second year.



Noel Young

It was early on a very cold morning recently that I entered the Happy Valley track and came upon this male Scarlet Robin sitting on a post (warm wood) absorbing what he could of the early rays of sunshine. He was very reluctant to vacate his spot, and allowed me to take several shots and move on. I wish more birds could be that willing to be photographed, but then I suppose that would make it less challenging as a pass-time.



Coming Events in July

Monthly Meeting: Friday 11th July, 7.30pm by Zoom

“Our endangered grasslands: threats and ways forward”

Speaker: Adrian Marshall (Grassy Plains Network facilitator, VNPA)

Dr Adrian Marshall is the Facilitator of the Grassy Plains Network, which is a project of the Victorian National Parks Association. He advocates for the greater protection of Victoria's native grasslands and runs a range of community engagement activities to raise people's awareness of our extremely threatened grassy ecosystems. He co-edited “Land of sweeping plains: managing and restoring the native grasslands of south-eastern Australia” and is the author of the urban design guidelines “Start with the grasslands”. He is a landscape architect and has a PhD in urban ecology.

How to join the Zoom meeting – you need to **register in advance** to receive the link for joining the Zoom session. To register, please click on the following link or copy this url into your browser:

<https://us06web.zoom.us/join/register/1fwtfjucRqavqpxAhbswMw>

We recommend joining the session 5 – 10 minutes before the meeting to avoid congestion at 7.30pm.

Observations: We would all love to hear about your recent interesting observations at the meeting. Contributions from both members and visitors are welcome. Please email any photos to illustrate your report as uncropped JPEG file(s) to Jill Williams (jilliwill33@gmail.com) by noon on the day of the meeting.

Excursion: Saturday 12th July, 10.00am, “Fungi search”, Mt Alexander

Leader – Joy Clusker

Rain at last! So for our July excursion we will go on a fungi search with Joy Clusker, co-author of the excellent guide to identification of the “Fungi of the Bendigo Region”. Joy will give us valuable tips on identification and where to find fungi. Since the light drops early at this time of the year, we will meet earlier than usual and take a picnic lunch. Our search will be along the Ballantinia Track, Mt Alexander.

Meet: at the northern end of the Car Park north of the Railway Goods Shed, Kennedy St Castlemaine for a prompt **10.00am** departure (car-pooling as much as possible) or meet at **10.20am** at the southern end of Ballantinia Track where it meets Joseph Young Drive ([Google Maps link](#)).

Bring: Water, snacks, **clean** sturdy shoes, chairs and lunch. Also, a small mirror for viewing the underside of fungi caps and a kneeling mat or knee pads would be useful.

Please note: Our local composting group YIMBY, who work to divert organic waste from landfill and turn it into soil enriching compost, will feature on the ABC's Gardening Australia next Friday evening (4th July at 7:30pm).

SEANA Spring Camp - Ballarat, 17-19 October, 2025

Hosted by the Field Naturalist's Club of Ballarat Inc.

The South East Australian Naturalists' Association (SEANA) "camps" are an excellent chance to meet fellow naturalists from around SE Australia and explore a new region under the guidance of local experts. The Field Naturalists' Club of Ballarat Inc. warmly invites you to attend the SEANA Spring camp for 2025.

The camp will be based at Pax Hill Scout Camp. Full- and half-day field trips will be offered, visiting sites such as Woowookarung & Creswick Regional Parks, endangered grasslands, Trust for Nature-covenanted properties, lakes & waterfalls, Mt Beckworth, BirdLife Australia's Clarksdale Bird Sanctuary, Mt Elephant and Enfield State Park.

Information and the registration form for this camp are available by clicking the links below.

The **First Notice** – an overview of planned activities and guest speakers, accommodation suggestions (attendees are responsible for booking their own accommodation).

Registration Form - payment and registration details, any dietary requirements.

Please note - Registration and payment are due by Friday 5th September, 2025.

Enquiries: email: ballaratfnc@gmail.com

CFNC Weekend at Wedderburn, 12-14 September, 2025

This year, our "out of town" weekend will be based at Wedderburn. An exciting program of evening speakers and day-time excursions to nearby nature reserves is being organised. Our guest speakers will be Professor Michael Kearney from the University of Melbourne, Biosciences and local orchid expert and CFNC member, Russell Stanley. Michael has a special interest in the reptiles and insects of Mt Korong and uses the results of his Mt Korong field studies in his ongoing climate research programs. Russell will tell us about the update of his "Field Guide for the Orchids of the Inglewood and Kooyoorra Areas". Both Michael and Russell will lead field excursions over the weekend.

Itinerary: Dinner and guest speaker on Friday and Saturday evenings in the Wedderburn Community House, 24 Wilson Street. Catering by the Wedderburn Hotel. Excursions to nearby nature reserves on Saturday and Sunday.

Attendees must organise their own accommodation (see options below), breakfasts and lunches. BYO wine/beer for evening meals. There is a supermarket, café and hotel in town.

Transport: Wedderburn is about a 1hr 15 min drive from Castlemaine.

Car-pooling: Please let us know if you can provide a ride for one or more people or if you would like a ride.

Registration (covers evening meals and hire of the meeting room): \$90 per person for 2 nights (\$45 for one night)

Please pay into the Club bank account **by the 8th August**. Make sure you put your name as the reference on your bank transfer. The bank account details - Name: Castlemaine Field Naturalists; BSB: 633000; Account: 110396256.

Confirm payment: Please email Jenny Rolland jennifer.rolland@monash.edu to advise that payment has been made and whether you require or can help with transport.

Enquiries: Jenny Rolland 0400 565 092, jennifer.rolland@monash.edu.

Accommodation options: attendees to organise their own accommodation and book as soon as possible.

Wedderburn Goldseeker Motel, 43 High St., 03 5494 3002

Kurracaburn Heights, 1 Hospital St., 0427 943 5962 - Kurraca House accommodates 5 couples.

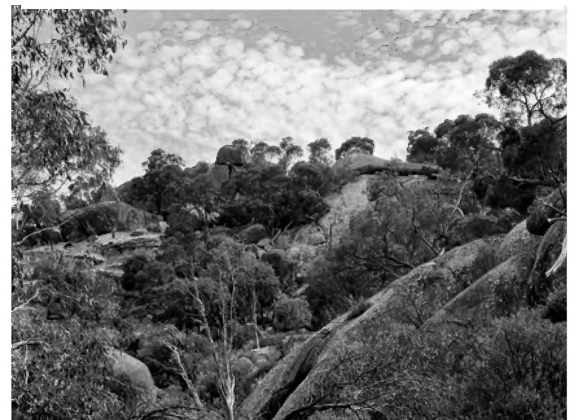
Wedderburn Hotel, 72 High St., 03 5494 3008 – "Miners Cottage" rooms with shared bathrooms.

Pioneer Caravan Park, 63 Hospital St., 03 5494 3301 - large cabins (3), powered and unpowered sites.

Hard Hill Tourist Reserve, 64 Wilson St. - free camping, toilet and shower block.



Thelymitra megcalypta Photo: Euan Moore



Mt Korong Photo: Jenny Rolland



Photo: Noel Young

Program

Monthly meetings are being held on-line via Zoom during the winter months (June, July and August) commencing at 7.30pm. Please register in advance (see "Coming Events" page) to receive the link for joining the meeting. Members and visitors are invited to share their interesting observations at these meetings. Please email any photos to illustrate your report as uncropped JPEG file(s) to **Jill Williams** (jilliwill33@gmail.com) by noon on the day of the meeting.

Excursions are held on the Saturday following the monthly meeting and leave from the northern end of the car park north of the Railway Goods Shed, Kennedy St. at 1.30pm unless stated otherwise.

See "Coming Events" page for more details about July events.

Fri 11th July, 7.30pm

Meeting (Zoom): "Our endangered grasslands: threats and ways forward"
Speaker: Adrian Marshall (VNPA, Grassy Plains Network facilitator)

Sat 12th July, 10.00am

Excursion: "Fungi search", Mt Alexander
Leader: Joy Clusker

Fri 8th August, 7.30pm

Meeting (Zoom): "What will climate change bring to Castlemaine weather?"
Speaker: Dr Linden Ashcroft (Melbourne University)

Sat 9th August, 1.00pm

Excursion: "Grassland treasures", Baringhup
Leader: Kerrie Jennings

Fri 12th-Sun 14th September

CFNC Weekend at Wedderburn (see information and registration details in this newsletter)

See our website calendar of events for further dates and activities:

[Calendar of Events – Castlemaine Field Naturalists Club](#)

Visitors are welcome at club activities

Castlemaine Field Naturalists Club Inc.

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Membership

Includes the monthly newsletter, Castlemaine Naturalist.
(Membership forms on [CFNC website](#))

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The Nodding Greenhood *Pterostylis nutans* is the emblem of the club. Design by Rita Mills.

Disclaimer: The opinions expressed in this newsletter are those of the contributors and not necessarily those of the club.